

**REMARKS**

The present application includes claims 2-4, 6-19, 22, 24-26, 28-29, and 31-32. All pending claims were rejected in the outstanding Office Action. By this Amendment, claim 36 has been added.

Claims 2, 4, 6, 9-11, 13, 22, 24-25, 28-29 and 32 were rejected under 35 U.S.C. § 102(b) as being anticipated by any one of Omori, JP 3-150494 ("Omori-1"), Kubota, JP 2-275397 or Omori, JP 3-68894 ("Omori-2").

Claims 2 and 6 were rejected under 35 U.S.C. § 102(b) as being anticipated by Omori-1.

Claims 14 and 15 were rejected under 35 U.S.C. § 102(b) as being anticipated by Kubota.

Claims 16-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over either one of Omori-1 or Kubota, in view of either one of Yamazaki, EP 0393461 or Van Noorden, NL 8902-962-A.

**I. THE PENDING CLAIMS ARE PATENTABLE UNDER 35 U.S.C. § 101**

The outstanding Office Action asserts that the pending claims are inoperative and lack utility under 35 U.S.C. § 101. The reasons asserted for this are the same as those set forth in section 5 of the Office Action mailed September 23, 2002, and section 2 of the outstanding Office Action (mailed May 19, 2003). Applicant respectfully traverses this rejection. Two independent reports support the method for energy generation described in the present application. Copies are attached to the Information Disclosure Statement

("IDS") filed herewith. First, *Report on Experimental and Theoretical Results Confirming the Existence of More Compressed Atomic Structures*, by Professors Lino Daddi and Elio Conte confirms the existence of more compressed atomic structures which have sub-ground energy states. Second, *Evaluation of Thermal Energy Cell*, by Dr. Jason Riley of the University of Bristol, confirms that a significant amount of energy is produced using the apparatus and method of the present invention. Applicant also submits, attached to the IDS, two letters submitted to the European Patent Office further explaining these independent reports. Withdrawal of the rejection under 35 U.S.C. § 101 is respectfully requested.

**II. THE SPECIFICATION ENABLES THE PENDING CLAIMS UNDER 35 U.S.C. § 112, FIRST PARAGRAPH**

The outstanding Office Action asserts that the pending claims are not enabled under 35 U.S.C. § 112. The reasons asserted for this are the same as those set forth for the rejection under 35 U.S.C. § 101 in outstanding Office Action (mailed May 19, 2003). Applicant respectfully traverses this rejection. Two independent reports support the method for energy generation described in the present application. As explained above, copies are attached to the IDS filed herewith. For the reasons discussed above with respect to the utility rejection under 35 U.S.C. § 101, the pending claims are enabled.

Moreover, the outstanding Office Action relies on the articles criticizing the Fleishmann and Pons ("F and P") "cold fusion" concept. The Office Action's argument is misplaced for at least two reasons. First, these articles are rebutted by a recent article, *Cold Fusion Isn't Dead, It's Just Withering from Scientific Neglect* by Sharon Begley,

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published September 5, 2003 in the Wall Street Journal. A copy of this article is attached to the IDS filed herewith.

Second, the Office Action asserts that the mechanism disclosed in F and P (in WO 90/10935) is the same as that described in the present application. Specifically, the Office Action asserts that the prior art system includes electrolytic decomposition of isotopic hydrogen water into highly mobile nuclei or ions. (Office Action, p. 2.) In contrast, the present invention relates to the fusion of atoms which have a reduced radius, not ions. Further, F and P does not teach the use of a catalyst to initiate transitions of hydrogen and/or deuterium atoms to a sub-ground energy state. Therefore, the present invention is distinguishable from F and P.

For these reasons, withdrawal of the rejection under 35 U.S.C. § 112 is respectfully requested.

### **III. THE PENDING CLAIMS ARE PATENTABLE OVER THE ART OF RECORD**

#### **A. CLAIM 2, AND ALL CLAIMS DEPENDING THEREFROM, ARE PATENTABLE OVER THE ART OF RECORD**

The Applicant now turns to the rejection of claims 2, 4, 6, 9-11, 13, 22, 24-25, 28-29 and 32 under 35 U.S.C. § 102(b) as being anticipated by any one of Omori, JP 3-150494 ("Omori-1"), Kubota, JP 2-275397 or Omori, JP 3-68894 ("Omori-2"). This rejection is respectfully traversed. Specifically, neither Omori nor Kubota discloses, teaches or suggests the use of a catalyst suitable for initiating transitions of hydrogen

and/or deuterium atoms in the electrolyte to a sub-ground energy state, as recited in claim 2.

Omori-1 discloses a nuclear fusion generating device in which a plasma discharge is generated across two electrodes immersed in heavy water, which results in the production of  $D^+$  ions. Omori-1 also discloses a pressure isolating structural body for controlling the pressure generated as a result of the plasma discharge. Omori-1 teaches that these  $D^+$  ions are accelerated towards the cathode by an electric field and a pressure wave created as a result of the plasma discharge. The cathode has high  $D^+$  adsorption properties. In this way,  $D^+$  ions collect at the cathode and collide with other  $D^+$  ions, resulting in forced fusion of the nuclei. The use of the pressure isolating structural body allows a greater pressure wave to be generated, resulting in a greater likelihood that  $D^+$  ions will be forced together. The pressure isolating body may alternatively be formed with high adsorption properties such that the  $D^+$  ions collect and collide there. This permits a lower voltage to be applied across the electrodes. However, Omori-1 does not teach the use of a catalyst suitable for initiating transitions of hydrogen and/or deuterium atoms in the electrolyte to a sub-ground energy state, as recited in claim 2.

Omori-2 relates to the same nuclear fusion generator as disclosed in Omori-1, though it does not disclose the use of a pressure isolating structural body. Accordingly, Omori-2 also does not disclose, teach or suggest the use of a catalyst suitable for initiating transitions of hydrogen and/or deuterium atoms in the electrolyte to a sub-ground energy state, as recited in claim 2.

Kubota discloses a nuclear fusion device comprising an anode and a cathode, wherein the cathode absorbs deuterium resulting in a high density of deuterium present in the cathode. Kubota teaches the use of a spherical or cylindrical cathode so that deuterium is absorbed over a relatively large surface area and becomes concentrated as the deuterium moves towards the center of the cathode. This increases the probability that a collision, and therefore fusion, will occur. However, Kubota does not disclose, teach or suggest the use of a catalyst suitable for initiating transitions of hydrogen and/or deuterium atoms to a sub-ground energy state, as recited in claim 2. Kubota also does not disclose, teach or suggest the generation of the plasma discharge in the electrolyte.

It is therefore respectfully submitted that claim 2 defines patentable subject matter over the art of record. Claims 3-4, 6-19, 22, 24-26, 28-29 and 31-32, which directly or indirectly depend from claim 2, are patentable for the reasons discussed above and the additional features they recite. Accordingly, all other § 102(b) and § 103(a) rejections are moot. Withdrawal of the rejections under 35 U.S.C. §§ 102(b) and 103(a) are respectfully requested.

**B. CLAIM 12 IS PATENTABLE OVER THE ART OF RECORD**

None of the art of record discloses, teaches or suggests a method of releasing energy wherein the current density generated by the applied voltage is  $400,000 \text{ A/m}^2$  or above, as recited in claim 12. Accordingly, claim 12 is patentable over the art of record.

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It is therefore respectfully submitted that claims 12 defines patentable subject matter. Withdrawal of the rejection of claim 12 under 35 U.S.C. § 102(b) is therefore respectfully requested.

**C. NEW CLAIM 36 IS PATENTABLE OVER THE ART OF RECORD**

Turning to the new claim, the art of record fails to teach or suggest the claimed “method of releasing energy comprising the steps of providing an electrolyte having a catalyst therein, the catalyst . . . being capable of absorbing approximately  $(m \cdot 27.2)\text{eV}$ , where  $m$  is an integer” required by claim 36. Claim 36 is therefore patentable over the art of record.


**IV. CONCLUSION**

If the Examiner has any questions or the Applicant can be of any assistance, the Examiner is invited and encouraged to contact the Applicant at the number below.

The Commissioner is authorized to charge any necessary fees or credit any overpayment to the Deposit Account of McAndrews, Held & Malloy, Account No. 13-0017.

Respectfully submitted,

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